



**What is claimed is:**

**1. A light source for white LED lighting, constituted by:**

(i) inserting and holding a plurality of white LED elements in holding holes in a reflective plate, said plate being constituted by providing a required number of said holding holes, in a matrix-like array of prescribed pitch, in a plate of shape corresponding to the illuminating surface of a lamp body;

(ii) fixing said plurality of white LED elements at locations 2 to 4 mm behind their respective electrode portions;

(iii) attaching the positive and negative terminals of the white LED elements to a base plate for the LED elements, said base plate being disposed parallel to and directly behind the reflective plate; and

(iv) forming, at the positive and negative terminals, a series-parallel electrical network suitable for the applied voltage.

**2. A white LED lighting device consisting of:**

(A) a lamp body provided with a lamp casing, a colourless transparent globe matchingly fixed to an opening in the bottom of said lamp casing, a light source for white LED lighting housed in the lamp casing, and a light source controller likewise housed in the lamp casing;

(B) a lamp support for supporting the lamp body in an attitude such that the illuminating surface of said lamp body is directed downward and its axis in the longer direction extends forwards with a slight upward tilt; and

(C) a power source device housed in the lower part of the lamp support and serving to supply electric power to the light source for white LED lighting;

said white LED lighting device characterized in that:

(D) the lamp casing and the globe have, in those parts facing the light source for white LED lighting, a transverse sectional shape which is rectangular in the rear portions that lie towards the mounting base, the sides of said rectangular shape which are parallel to said longer direction being the short sides, and which is an elongated trapezoid in the front portions that are adjacent to the rear portions;

(E) the inside of the illuminating surface of the globe is a smooth surface, the outside is a longitudinally banded concavo-convex surface consisting of adjoining ridges and valleys alternating in succession with a pitch of a few millimetres, and the

illuminating surface of the globe as a whole is formed as a curved plate with bilateral symmetry whereof the bottom is the center line in said longer direction;

(F) the light source for white LED lighting is constituted by:

(i) inserting and holding a plurality of white LED elements in holding holes in a reflective plate, said plate providing a required number of said holding holes in the form of a multi-row, multi-column array of prescribed pitch;

(ii) fixing said plurality of white LED elements at locations 2 to 4 mm behind their respective electrode portions;

(iii) attaching the positive and negative terminals of the white LED elements to a base plate for the LED elements, said base plate being disposed parallel to and directly behind the reflective plate; and

(iv) forming, at the positive and negative terminals, a series-parallel electrical network suitable for the applied voltage;

(G) the reflective plate and the base plate for the LED elements in said rear portions are formed into a bent plate having a wide half-angled gutter shape corresponding to said curved plate;

(H) the reflective plate and the base plate for the LED elements in said front portions are formed into an elongated trapezoidal flat plate corresponding to said curved plate; and

(I) the intrinsic irradiation range of the lamp body is enlarged on the basis of a synergism between the optical reflection capability of the reflective plate and the optical refraction capability of the corrugations and curved plate of the globe.

3. The white LED lighting device of Claim 2, wherein:

a solar cell is mounted and fixed at the upper end of the lamp support;

the power source device is provided with a storage battery; and

the light source controller is provided with automatic voltage sensing means for sensing the output voltage of the solar cell, and with automatic electrical storage means which uses said automatic voltage sensing means to cause electric power obtained from the solar cell to accumulate in the storage battery.

4. The white LED lighting device of Claim 3, wherein:

the lamp support is formed from a hollow pipe and provided with an air vent in the pipe wall close to the upper end, thereby enabling the hollow portion to produce a chimney effect so that heat generated by ambient air temperature can escape.

5. The white LED lighting device of Claim 3 or Claim 4, wherein:

the lamp body is provided with a metal heat shield plate mounted in the form of a sunshade directly above the lamp casing but leaving a slight air gap between said heat shield plate and the lamp casing.

6. The white LED lighting device of Claim 5, wherein:

the lamp body is provided with air inlets and air outlets in the rear and side faces of the side plate in said rear portions of the lamp casing.